Utility Interconnection Equipment Certification

The information on this form is provided to indicate the compliance of the generation equipment listed below with the utility interconnection certification requirements defined in California PUC Electric Rule 21

Certifying Laboratory *The information on this form is provided by the following Nationally Recognized Test Laboratory*

Laboratory: Underwriters Laboratories

Contact Name: Walter Jurek Phone: 847-272-8800 E-mail: walter.t.jurek@us.ul.com

Address: 333 Pfingsten Road

City: Northbrook State IL Zip 60062-2096

Accredited by: OSHA Date:11-15-02

Accredited to (test standards)[1]: UL 1741

Equipment Specification *The information on this form applies to the following equipment*

Equipment Manufacturer: Plug Power

Address: 968 Albany Shaker Road

City: Latham State NY Zip 12110

Model Number(s): MP5000

Software Version(s): MP5C3.3

Effective[2]: 04/01/03

Device Description[3]: Single phase utility interactive 5 kW inverter.

Multimode functionality:

Grid Parallel output is current source matching nominal 120 VAC, 60Hz grid voltage,

Stand alone, grid independent output is voltage source supplying 120 VAC +/-5% per ANSI C84, 60 Hz.

DC input supplied separately.

Test Results[4]

Mark the box next to each requirement that has been met and each test that has been performed and successfully passed. Provide an explanation of any exceptions or omissions on a separate sheet. List additional test documents used on a separate sheet

UL 1741: (Section number listed)

[X]-39	[X]-40.1	[X]-41.2	[X]-44	[X]-45.2.2	[X]-45.4	[X]-45.5
[X]-46.2	[X]-46.2.3	[X]-46.4	[X]-47.3	[X]-47.7	*Optional:*	[X]-*46.3*

X-IEEE/ANSI C62.45/C62.41 (location Category B3)

California Rule 21: [N/A]-J.3.e Non-export [N/A]-J.3.f In-Rush Current [N/A]-J.3.h Synchronization

Device Rating:[5] 5kW _____

Maximum available fault current, 83A _____

In-rush current[6], N/A _____

Trip settings (Magnitude/Timing)[7]:

		Setting 1	Setting 2	Setting 3	Setting 4	Factory Setting[8]
Fast Over Voltage	Setting	148V / 4.4ms	/	/	/	148v 4.4ms
	Measured	148V / 3.44ms	/	/	/	
Over Voltage	Setting	131V / 500ms	/	/	/	131v 500ms
	Measured	131V / 1.18s	/	/	/	
Fast Under Voltage	Setting	88V / 23ms	/	/	/	88v 23ms
	Measured	88V / 22.4ms	/	/	/	
Under Voltage	Setting	108V / 500ms	/	/	/	108v 500ms
	Measured	108V / 1.24s	/	/	/	
Over Frequency	Setting	60.3Hz / 6cy	/	/	/	60.3hz 6cy
	Measured	60.3Hz / 5.424cy	/	/	/	
Under Frequency	Setting	59.4Hz / 6cy	/	/	/	59.4hz 6cy
	Measured	59.4Hz / 5.424cy	/	/	/	

Nominal Power Factor (Range, if adjustable) 1.0 (not adjustable) _____

Non Islanding: Yes X No ___ Maximum trip time: 0.614sec _____

Non Export: Yes ___ No X Method: _____

Other[9]: _____

_____

_____

_____

Notes:

[1] Accreditation must apply to test standards listed herein.

[2] Note here the date of certification, applicable serial number (range or first in series), or other information that indicates to which units the certification applies.

[3] List appropriate functions, capabilities, applications, limitations, etc. Use additional sheets as necessary.

[4] List all test documents (i.e. UL 1741, IEEE C62.45) and specific procedures (i.e. UL 1741 Sec 39.1 – 39.5, etc.) used to evaluate device's suitability for utility interconnection

[5] kW, kVA, V, A, etc., as appropriate.

[6] For devices that use grid power to motor to speed.

[7] Enter trip magnitude, Voltage in volts or frequency in Hz, and trip timing, in cycles into each square (Magnitude/Timing). Devices with adjustable settings shall provide test results over the range of settings. For each test setting provide the setting values in the upper box and measured results in the lower box. List device ranges, if adjustable. Show data for one phase (greatest % difference between setting and measured magnitudes as well as the maximum trip time for that setting). Provide data for all phases (on additional sheets) if measured trip values for any two phases differ by more than 3% (for the same setting).

[8] Note standard factory settings. Provide Voltage/Timing or Frequency/Timing.

[9] Provide any additional information that may be useful in evaluating these results such as test configurations, device settings used to meet requirements, etc. Use additional sheets if necessary.